

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/15344

## A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl.<sup>7</sup> G03F7/11, C08G77/14, H01L21/027

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl.<sup>7</sup> G03F7/11, G03F7/039, C08G77/14, H01L21/027

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
STN(CA, REGISTRY)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 2001-51422 A (TOKYO OHKA KOGYO CO., LTD.), 23 February, 2001 (23.02.01), Claims; Par. Nos. [0013] to [0030], [0058] (Family: none)	1-15
X A	US 2002/0025495 A1 (TOKYO OHKA KOGYO CO., LTD.), 28 February, 2002 (28.02.02), Claims 1 to 10; Par. Nos. [0025] to [0031], [0058] & JP 2002-55452 A	1,3-15 2
X A	WO 02/091083 A1 (SHIPLEY CO., L.L.C.), 14 November, 2002 (14.11.02), Page 6, line 15 to page 10, line 19; Claims 52 to 74 (Family: none)	1,3-15 2

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;"

document member of the same patent family

Date of the actual completion of the international search  
26 February, 2004 (26.02.04)Date of mailing of the international search report  
16 March, 2004 (16.03.04)Name and mailing address of the ISA/  
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 63-101427 A (HITACHI, LTD.), 06 May, 1988 (06.05.88), Claims; page 2, lower left column, 4th line from the bottom to lower right column, line 4 (Family: none)	10-14
X	JP 63-90534 A (HITACHI, LTD.), 21 April, 1988 (21.04.88), Claims; page 2, lower left column, 5th line from the bottom to lower right column, line 6 (Family: none)	10-14
X	EP 0204963 A2 (HITACHI, LTD.), 17 December, 1986 (17.12.86), Full text & JP 62-96526 A	10-14
A	JP 8-319422 A (Kaneka Corp.), 03 December, 1996 (03.12.96), Full text (Family: none)	10-14
A	JP 8-143578 A (Kaneka Corp.), 04 June, 1996 (04.06.96), Full text (Family: none)	10-14
A	US 5612170 A (Shin-Etsu Chemical Co., Ltd.), 18 May, 1997 (18.05.97), Full text & JP 8-160605 A	1-15
A	US 5691396 A (Shin-Etsu Chemical Co., Ltd.), 25 November, 1997 (25.11.97), Full text & JP 9-87391 A	1-15
A	JP 2000-235264 A (Fuji Photo Film Co., Ltd.), 29 August, 2000 (29.08.00), Full text (Family: none)	7-9, 15
A	EP 1142928 A1 (JSR Corp.), 10 October, 2001 (10.10.01), Full text & JP 2001-288268 A	1-15
E, X	JP 2004-38143 A (Shipley Co., L.L.C.), 05 February, 2004 (05.02.04), Par. Nos. [0006], [0046] to [0048], [0058] to [0062], [0116] to [0118] (Family: none)	1-15

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## Box I Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

(See extra sheet)

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest ☐ The additional search fees were accompanied by the applicant's protest.  
☒ No protest accompanied the payment of additional search fees.

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Continuation of Box No. II of continuation of first sheet(1)

Invention Group 1. The inventions of claims 1-9 and 15 relate to a chemical amplification type silicone base positive resist composition comprising alkali soluble resin (A) and photoacid generator (B) characterized in that a ladder type silicone copolymer comprising (hydroxyphenylalkyl)silsesquioxane units ( $a_1$ ), (alkoxyphenylalkyl)silsesquioxane units ( $a_2$ ) and alkyl- or phenylsilsesquioxane units ( $a_3$ ) is used as the alkali soluble resin (A).

Invention Group 2. The inventions of claims 10-14 relate to a ladder type silicone copolymer comprising ladder alkylsilsesquioxane units comprising (hydroxyphenylalkyl)silsesquioxane units, (alkoxyphenylalkyl)silsesquioxane units and phenylsilsesquioxane units.

The ladder type silicone copolymers included in the technical features of these two invention groups, although partially common to each other, do not constitute the same or corresponding technical features.